WHAT IS CLAIMED IS:

1. An isolated nucleic acid molecule, comprising a sequence encoding a BT toxin receptor of about 200 kD from the pink bollworm, *Pectinophora gossypiella*.

2. The isolated nucleic acid molecule of claim 1, encoding the BT toxin receptor sequence of SEQ ID NO: 2.

3. The isolated nucleic acid molecule of claim 1, comprising the sequence of SEQ ID NO: 1.

4. The isolated nucleic acid molecule of claim 1, wherein said isolated nucleic acid molecule is capable of hybridizing at high stringency to a probe of 400 contiguous nucleotides of SEQ ID NO: 1 over the entire length of said probe.

5. The isolated nucleic acid molecule of claim 1, wherein said BT toxin receptor is at least 85% homologous to the sequence of SEQ ID NO: 2.

6. The isolated nucleic acid molecule of claim 1, wherein said BT toxin receptor is at least 90% homologous to the sequence of SEQ ID NO: 2.

7. The isolated nucleic acid molecule of claim 1, wherein said BT toxin receptor is at least 95% homologous to the sequence of SEQ ID NO: 2.

8. The isolated nucleic acid molecule of claim 1, wherein said BT toxin receptor is at least 98% homologous to the sequence of SEQ ID NO: 2.

9. The isolated nucleic acid molecule of claim 1, wherein the sequence is codon optimized for expression in a prokaryotic system.

10. The isolated polynucleotide sequence of claim 1 wherein the sequence is codon optimized for expression in a eukaryotic system.

11. An expression vector, comprising the isolated nucleic acid molecule of claims 1-10.

12. A host cell, comprising the vector of claim 11.

13. The host cell of claim 12, which is used to assess the level of cytotoxicity and mode of action of toxins.

14. A cell, comprising a naturally occurring BT toxin receptor, which is used to assess the level of cytotoxicity and mode of action of toxins.

15. A transgenic organism, comprising the vector of claim 11.

16. An isolated nucleic acid molecule, comprising a sequence encoding a peptide selected from the group consisting of: amino acid (aa) 534-544, aa 291-304, aa 697-705, aa 622-632, aa 886-895, aa 791-803, aa 1055-1066, aa 1621-1642, aa 1321-1331, aa 1451-1461, aa 1516-1525, aa 1572-1582, aa 1677-1729, and aa 1269-1367 of SEQ ID NO: 2.

17. A purified protein, comprising a sequence that is at least 85% homologous to SEQ ID NO: 2.

18. The purified protein of claim 17, wherein the sequence is at least 90% homologous to SEQ ID NO: 2.

19. The purified protein of claim 17, wherein the sequence is at least 95% homologous to SEQ ID NO: 2.

20. The purified protein of claim 17, wherein the sequence is at least 98% homologous to SEQ ID NO: 2.

21. The purified protein of claim 17, wherein the sequence is SEQ ID NO: 2.

22. A purified peptide, comprising a sequence selected from the group consisting of; amino acid (aa) 534-544; aa 291-304; aa 697-705; aa 622-632; aa 886-895; aa 791-803; aa 1055-1066; aa 1621-1642; aa 1321-1331; aa 1451-1461; aa 1516-1525; aa 1572-1582; aa 1677-1729; and aa 1269-1367 of SEQ ID NO: 2.

23. The purified peptide of claim 22, that comprises aa 1269-1367 of SEQ ID NO: 2.

24. A purified peptide that comprises at least 17 contiguous amino acids (aa) from aa 1677-1729 of SEQ ID NO: 2.

25. An isolated nucleic acid molecule, comprising a first sequence that is capable of hybridizing at high stringency to a probe of a second sequence along said probes entire length, wherein said second sequence is nucleotides 3807-4101 of SEQ ID NO: 1.

26. An isolated nucleic acid molecule, comprising a sequence that encodes the peptide of claims 19-21.

27. *Bacillus thuringiensis* Cry toxin receptor antibody, that binds to an antigen present in the carboxyl tail of a BT-R2 protein as identified in SEQ ID NO: 2, and does not bind to silkworm or tobacco hornworm *Bacillus thuringiensis* Cry toxin receptors.

28. A *Bacillus thuringiensis* Cry toxin receptor antibody, that binds to an antigen present in a BT-R2 protein as identified in SEQ ID NO: 2, and also binds to

silkworm and tobacco hornworm *Bacillus thuringiensis* Cry toxin receptors.